

HIGH TEMPERATURE HIGH PRESSURE CAPSULE FOR PROCESSING MATERIALS IN SUPERCRITICAL FLUIDS

Abstract of Disclosure

A capsule for containing at least one reactant and a supercritical fluid in a substantially air-free environment under high pressure, high temperature processing conditions. The capsule includes a closed end, at least one wall adjoining the closed end and extending from the closed end; and a sealed end adjoining the at least one wall opposite the closed end. The at least one wall, closed end, and sealed end define a chamber therein for containing the reactant and a solvent that becomes a supercritical fluid at high temperatures and high pressures. The capsule is formed from a deformable material and is fluid impermeable and chemically inert with respect to the reactant and the supercritical fluid under processing conditions, which are generally above 5 kbar and 550 ° C and, preferably, at pressures between 5 kbar and 80 kbar and temperatures between 550 ° C and about 1500 ° C. The invention also includes methods of filling the capsule with the solvent and sealing the capsule, as well as an apparatus for sealing the capsule.

Figures

Figure 1: A line graph showing the relationship between the number of hours spent studying and the score on a test. The x-axis represents 'Hours Studied' (0 to 10) and the y-axis represents 'Test Score' (0 to 100). The data points are as follows:

Hours Studied	Test Score
0	50
1	55
2	60
3	65
4	70
5	75
6	80
7	85
8	90
9	95
10	100

The graph shows a positive linear correlation between the number of hours studied and the test score. The line starts at (0, 50) and ends at (10, 100).